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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,010	06/04/2001	Francis A.L. Dullien	612.34893VV3	5301

20457 7590 01/17/2002

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EXAMINER

BUSHEY, CHARLES S

ART UNIT	PAPER NUMBER
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1724

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DATE MAILED: 01/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/872,010

Applicant(s)

DULLIEN ET AL.

Examiner

Scott Bushey

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-23 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-10 and 13-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/727,641.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Art Unit: 1724

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, 7, 9, 10, 13, 14, 16-18, 20, and 21 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Britain 632,360 (Figs. 1-5; page 1, lines 57-66, 80-87; page 2, lines 37-41; page 3, lines 16-45, 68-87; page 5, lines 77-86, 122-128).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 1724

5. Claims 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Britain 632,360.

Britain 632,360 (Figs. 1-5; page 1, lines 57-66, 80-87; page 2, lines 37-41; page 3, lines 16-45, 68-87; page 5, lines 77-86, 122-128) substantially discloses applicant's invention as recited by instant claims 15 and 19, except for the recitation that the porous fibrous material of the collection elements has a porosity of 90% to 99.9%. Wherein the reference clearly teaches utilizing porous fibrous mats or pads on all surfaces of the flow channels through the device, to provide collection of particles from the fluid stream in the same manner as applicant, i.e., by vortical deposition of particles within the stagnant spaces provided by the pads, it would have been obvious for an artisan at the time of the invention, to arrive at optimal workable porosity levels of the pads of the reference by way of routine experimentation, applicant's desired porosity levels being an obvious result of that routine experimentation.

6. Claims 3 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Britain 632,360 taken together with Brown et al.

Britain 632,360 (Figs. 1-5; page 1, lines 57-66, 80-87; page 2, lines 37-41; page 3, lines 16-45, 68-87; page 5, lines 77-86, 122-128) substantially discloses applicant's invention as recited by instant claims 3 and 22, except for the recitation that the elements are electrostatically charged.

Brown et al (Figs. 3-5) disclose an apparatus for removing particles from a fluid stream similar to that of the British reference, but wherein the elements which define the unobstructed flow channels are electrostatically charged in order that the separation efficiency of the apparatus would be greatly increased. It would have been obvious for an artisan at the time of the

Art Unit: 1724

invention, to provide the filtration elements of the British reference with static charges, in view of Brown et al, since such would expectedly increase the particle collection efficiency of the apparatus as suggested by the British reference.

7. Claims 8 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Britain 632,360 taken together with any one of Sheehan, Jesernig et al, McClure, Hoon et al, and Schmidt, Jr. et al.

Britain 632,360 (Figs. 1-5; page 1, lines 57-66, 80-87; page 2, lines 37-41; page 3, lines 16-45, 68-87; page 5, lines 77-86, 122-128) substantially discloses applicant's invention as recited by instant claims 8 and 23, except for the recitation that the elements are shaken or moved to facilitate particle removal from the surfaces thereof.

Sheehan, Jesernig et al, McClure, Hoon et al, and Schmidt, Jr. et al (See the Abstract of each secondary reference) each disclose vertically oriented tubular particle elimination elements that are provided with shaker means for periodically shaking the filter elements to remove collected particles therefrom. Wherein it is notoriously well known within the art of air filtration to periodically renew the filter surface by removing a collected layer of particles by vibrating the filter surface with a shaker mechanism, it would have been obvious for an artisan at the time of the invention, to provide the apparatus as taught by British reference 632,360, with shaker means, in view of any one of the alternative secondary references, since such would increase the filtration efficiency of the British reference in a well known manner by eliminating the need to shut down the apparatus for regular cleaning of the filter elements thereof.

Art Unit: 1724

Response to Arguments

8. Applicant's arguments with respect to claims 14-23 have been considered but are moot in view of the new grounds of rejection.

9. Applicant's arguments filed December 28, 2001, with respect to claims 1-4, 7-10, and 13 have been fully considered but they are not persuasive.

With respect to the argument that the British reference cannot anticipate the claimed invention because, in applicant's view it does not teach turbulent flow of the fluid stream and according to applicant it allegedly teaches away from turbulent flow, such is not found to be persuasive. Applicant cites page 1, lines 31-36 and page 3, lines 24-33 as evidence that the reference teaches away from using turbulent flow within the device. Such could not be further from the truth.

The British reference teaches throughout that turbulent flow of the fluid stream through the device is the reason the device is capable of separating solid particles from the fluid stream. In fact the two portions of the reference cited by applicant simply emphasize that the turbulence need only be minimal. Please note lines 37-40 on page 1 of the reference, wherein it is stated "that even a small component of velocity at right angles to the general flow will suffice to bring a dust particle into contact with the wool." A fluid flow having a component of velocity at right angles to the general flow is in turbulence. Fluid flow is either laminar, i.e., entirely aligned with the general flow direction of the fluid, or turbulent, i.e., flow that while it may include portions that are aligned with the general flow, it also must include portions or a component of velocity at right angles to the general flow, as result from the formation of eddies within a fluid stream. Applicant is invited to revisit the portions of the reference specifically cited by the Examiner in

Art Unit: 1724

the rejection statements set forth above, which emphasize the existence and necessity of turbulent flow within the British device to provide the desired separation.

With respect to the reference combination applied to claims 3 and 22, which require the fibrous material to have a static charge, the Brown et al reference has been applied to demonstrate the well known use of static electricity on fluid filtration elements to increase their collection capability over a smaller filter surface area than would be required without the static charges on the filter surfaces. Brown et al in no way teaches away from providing a charge to a fibrous filter surface. In fact, one having ordinary skill in the art would expect that providing a fibrous element with a static charge in the manner as suggested by Brown et al would further reduce the required surface area of the element over either an uncharged element of fibrous or non-fibrous construction.

With respect to the alternative secondary references as applied to instant claims 8 and 23, applicant has only argued that they do not remedy the deficiencies of the British reference, which allegations of deficiencies have been shown to be incorrect.

Conclusion

10. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

Art Unit: 1724

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bushey whose telephone number is (703) 308-3581. The examiner can normally be reached on Monday-Thursday 6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Simmons can be reached on (703) 308-1972. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Scott Bushey
Primary Examiner
Art Unit 1724

csb
January 16, 2002


1-16-02